Techniques for Leveraging Soliton Generators Operated from Ground Level for Mineral Detection and Characterization

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Introduction

Where spectroscopy has proven an invaluable tool for identifying everything from minerals to complex chemicals from a distance, this technique relies upon being able to shine light on the substance to be qualified and cannot be used to detect minerals obscured by rock and soil.

Ground penetrating radar, due to its frequency, cannot be used to measure spectral lines and provides only crude information barely useful for oil exploration. Fragmentary deposits of metals and gemstones would be particularly difficult to detect and qualify from a distance, but short of drilling test shafts and taking samples by hand, it is very difficult to determine what minerals, if any, are present in a given area.

Abstract

The semiconductors considered most valuable for national security are found in trace amounts amongst rock and must be concentrated by processing large quantities of rock containing comparatively low densities of the metal. Palladium, it is useful to know, is frequently found collocated with platinum. These metals may be quite easy to detect using soliton waves since solid chunks of metal will generate a return signal when struck with soliton waves.

Analysis of the time-of-flight data associated with a return of such a wave can be used to differentiate between more common metals like iron ore and precious metals such as platinum and palladium. Soltions have a far greater capacity to penetrate deep into the Earth than conventional radar and thus can be used in much the same way as sonar. Importantly, solitons react quite differently to certain materials versus conventional electromagnetism.

With conventional densitometry, the more heavy or dense a substance is, the more intense the return will be. While this is generally true with solitons, wave intensity can be adjusted infinitely to penetrate dense metals in shallow layers to clearly image other metals in deeper layers -- something that cannot be done efficiently with standard ground-penetrating radar.

Let's say that I am doing a survey and I detect a deposit of iron ore 300 feet down but I suspect there may be palladium farther down. With conventional EM, there is no way of getting useful data concerning a deposit obscured by other metals in an above layer. Solitons, however, can be projected with different levels of power sent to the electromagnets that spawn them in order to enable selective penetration of deposits to see what is beneath. More than this, each chemical element responds uniquely to solitons much as they have unique spectral lines when exposed to light. The big difference with solitons is the way in which useful data can be pulled out of a return image.

Where in spectroscopy, an element very efficiently absorbs very specific combinations of frequencies of light, solitons will return a different amount of the total projected energy depending upon density, with some notable exceptions. In some cases, a soliton wave, regardless of power level, will be entirely disrupted if it passes through crystalline structures. Many of the most valuable minerals have these crystalline structures, which means that in cases when a soliton-generated image of a known iron ore deposit is disrupted in a certain pattern, essentially a salt and pepper noise pattern, then it would indicate that there are crystalline structures between the known ore deposit and the surface.

Iron ore is so common in the Earth's crust that in theory, if a powerful enough rig were built, a suitable iron deposit could always be found to serve as a contrast for the imager. This technique may be termed Known Value Distortion Analysis. If there is a vein of iron ore 10 miles down -- deeper than anyone could drill -- although you may not have the ability or inclination to access that ore, if its distance can be measured, it can be used to help pinpoint precious metals and even gemstones at the shallower depths.

How exactly would this work? To use a metaphor: If there is an object that blocks but does not reflect light in an otherwise dark room and it is closer to the camera than the wall (also black in color,) there would be no way to measure its distance, much less notice its presence. Now let's say that same object were transparent to sonar but the wall behind it was sonar-reflective. How could I use sonar to see the object? By looking for the hole in the otherwise solid return showing the presence of a solid object.

This is possible with solitons as they are composed of electrons the spin of which never ceases, giving them no property of frequency or phase. The opposing spins in each slice of the flat wall of energy inhibit spin pauses and prevent phasing. Without spin pauses, there is little chance (but not zero) chance for resonance. Thus, solitons pass right through all but the most dense objects. There are two ways a soliton wave can be stopped: 1.) It is blocked and reflected by a metallic object or 2.) The relative spin orientation of the individual electrons making up the wave are altered by a material, randomizing their spin and causing part of the wall to be corrupted.

The very most coveted precious metals and gemstones would have this effect on soliton waves. This means that a hole in the return where there should be a solid, coherent return may indicate a structure that has spin-randomizing properties. Since time-of-flight is accounted for and dense metals can be penetrated by increasing power level, if there is a hole in a return pattern where there is zero returned energy, even in a static-filled return image without the nice and neat iron ore backdrop, you can reasonably conclude that your soliton wave passed through a spin randomizer and you would then know where to start digging. That approach may be termed Null Return Crystal Detection. The use of multiple imagers oriented at different angles can provide more accurate depth information concerning the location of the "holes," however, a single imager should suffice in that case since the imager would return standard levels of noise down to the depth with the crystals and zero return below that point.

Soliton generators' usefulness does not stop there. The generators can be taken into existing mineshafts to take close-up readings looking at the crust of the Earth from new angles and can be used to determine the best angles on which to drill new offshoots.

Conclusion

Whosoever has the presence of mind to develop this technology to the end of mineral discovery will likely have an insurmountable advantage when it comes to accessing needed minerals for the next several decades.